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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/352,563	07/13/1999	RAMANA V. GOLLAMUDI	1400.4100210	2433

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EXAMINER
EMDADI, KAMRAN

ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/352,563	GOLLAMUDI, RAMANA V.	
	Examiner	Art Unit	
	Kamran Emdadi	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,15-28 and 31-34* is/are rejected.

7)☒ Claim(s) *13,14,29 and 30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection. With this noted definition of an internal and external forwarding table found by the examiner and the new reference applied, the applicant's arguments have motivated the examiner to withdraw the previous 102 rejections: (Pitcher)/(Callon) and a new rejection is in order for claims 1-34 omitting the previously objected to claims.

   "In this illustration, the route computation engine 38 computes an external forwarding table 64 and a plurality of specific internal forwarding tables 64-74. **The external forwarding table 64 is common to all of the forwarding engines in the logically distributed router**. The external forwarding table indicates how data is forwarded to other external routers or other external entities with respect to the logically distributed router 22. As an example, external forwarding table 64 may indicate that" (Page 9)

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

   (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

   The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims: 1-4, 7, 15, 17-19, 23, 31, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Civanlar et al. (US Patent No. 6078963).

- Regarding claims 1-4, 7, 15, 17-19, 23, 31, and 34 Civanlar teaches: a plurality of forwarding engines 105, where the forwarding engines are contained in a router 100 and further encompassed within an intelligent router port 103 and in communication with a routing engine 105 and a routing database 104, all of which is in a communication switching fabric of 102 (Figure 1), the intelligent router port 103 can maintain its own internal routing table or forwarding packets to external network components (Col 3, lines 22-27), the routing engine 107 and the routing database 104 provide information to the forwarding engine 105 which is implied to be the device that transmits and receives to other router ports and external to the router (Col 3, lines 28-30), and the forwarding engine is said to forward routing table information that is received by the router ports to other ports for updating each port with routing information (Col 3, lines 43-47), and the forwarding engine compares the address information of a packet to determine where is needs to be forwarded to internal forwarding engines internal 202 to the router or external 201 to the router (Col 4, lines 59-67), and a processor and memory 200 found in the port of the router coupled to

the forwarding engine (Figure 2) and packets routed by the forwarding table (Col 3, lines 55-60).

- Regarding claim 7, Civanlar teaches: updating the routing tables (Col 3, lines 34-46).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 5, 6, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Civanlar et al. (US Patent No. 6078963) in view of Armitage et al. (US Patent No. 6374303).

- Regarding claims 5, 6, 21, and 22 Civanlar teaches: a network communication system with a plurality of forwarding engines communicating table information for neighboring forwarding engines both internal and external to a single router. But fails to teach of a authentication or acknowledgement process following the data table forwarding process. Armitage teaches: a multicast neighbor discover system for routers (Figure 2) with an acknowledgement process (Col 3, lines 60-67) and an authentication process to ensure integrity with the connected devices (Col 7, lines 55-60) all for the purpose of more efficient data forwarding for a routing system (Col 1, lines 22-25). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine these

two inventions for a continued efficient method of data forwarding by reducing unnecessary data forwarding and for the improvements to the concept outlined by Armitage.

5. Claims: 8, 9, 11, 12, 24, 25, 28, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Civanlar et al. (US Patent No. 6078963) in view of Callon (US Patent No. 5430727).

   - Regarding claims: 8, 9, 11, 12, 24, 25, 28, and 33 Civanlar teaches: all of the above embodiments except an external and internal forwarding table generated by the forwarding engine and forwarded to other devices. Callon teaches: an internal forwarding table is used to determine the destination address (Col 57, lines 39-44) and the same for external forwarding tables (Col 57, lines 50-55) where the routers know the other routers within the respective forwarding tables (Col 58, lines 60-65), and updating tables by level-2 routers which are taught as external type routers above (Col 45, lines 12-15), also the need for a full update in a system with internal and external forwarding tables must be done periodically (Col 52, lines 5-8). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the use of external and internal tables for routing outside of an individual switch to other forwarding engines to further maximize the capabilities of a network router or switch and to separate the table information accordingly to avoid unnecessary path routing.

6. Claims 16, 20 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Civanlar et al. (US Patent No. 6078963) in view of Varghese et al. (US Patent No. 5905723).

   - Regarding claims: 16, 20 and 32, Civanlar teaches: a forwarding engine with a table used for both internal and external routing, but fails to teach of a separate set of tables and groups of forwarding engines separated by the identification span of the tables. Varghese teaches: a forwarding engine that forwards packets to other ports containing forwarding engines based on groups that are derived from tables that specify the groups (Col 2, lines 28-37) and (Col 2, lines 55-58). Therefore it would have been obvious to group the forwarding engines to limit the table writing and reading step to engines that are within the vicinity of the forwarding process in order to reduce unnecessary traffic.

7. Claims: 10, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Civanlar et al. (US Patent No. 6078963) in view of Callon (US Patent No. 5430727) and further in view of Varghese et al. (US Patent No. 5905723).

   - Regarding claims: 10, 26 and 27, Civanlar teaches: a forwarding engine with a table used for both internal and external routing, but fails to teach of a separate set of tables and groups of forwarding engines separated by the identification span of the tables. Varghese further teaches: a forwarding engine that forwards packets to other ports containing forwarding engines based on groups that are derived from tables that specify the groups (Col 2, lines 28-37) and (Col 2, lines 55-58). Therefore it would have been obvious to group the forwarding engines to limit the

table writing and reading step to engines that are within the vicinity of the forwarding process in order to reduce unnecessary traffic.

Allowable Subject Matter

8. Claims 13, 14, 29 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach or render obvious the following claimed features:
   - Regarding claims 13 and 14 the use of a second internal and external forwarding table to forward to a second corresponding forwarding engine, and the multiplexing of the second internal and external forwarding tables.

Conclusion

The prior art made to record and not relied upon is considered pertinent to applicant's disclosure:

- Dobbins (US Patent No. 5509123) discloses an alternative architecture for routing at the network layer.
- Dobbins (US Patent No. 5951649) discloses an forwarding engine interface related system.
- Pitcher et al. (US Patent No. 6370142) IP multicasting.
- Chen et al. (US Patent No. 6487170) admission control and QoS.

- Schuster et al. (US Patent No. 6363053) Measurement-based conformance testing.
- Muller et al. (US Patent No. 6081512) Spanning tree support in a network device.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kamran Emdadi whose telephone number is (703) 305-4899. The examiner can normally be reached between the hours of 8am and 5pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached at (703) 305-4366. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9314 for regular communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Kamran Emdadi

04/03/2003